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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

ILLUMINA, INC. and
ILLUMINA CAMBRIDGE LTD.,

Plaintiffs,

v.

BGI GENOMICS CO., LTD.,
BGI AMERICAS CORP.,
MGI TECH CO., LTD.,
MGI AMERICAS, INC., and
COMPLETE GENOMICS INC.,

Defendants.

COMPLETE GENOMICS INC.,
Counterclaim-Plaintiff,

v.

ILLUMINA, INC., and
ILLUMINA CAMBRIDGE LTD.,
Counterclaim-Defendants.

Case No. 3:19-cv-03770-WHO (TSH)
Case No. 3:20-cv-01465-WHO (TSH)

**PLAINTIFFS' POSITION ON DISPUTES
CONCERNING DEPOSITION
DESIGNATIONS OF WITNESSES BGI
PLANS TO CALL**

Judge William H. Orrick

**ILLUMINA'S POSITIONS ON DISPUTES CONCERNING
DEPOSITION DESIGNATIONS OF WITNESSES BGI PLANS TO CALL**

Pursuant to this Court's Order of October 29, 2021, Plaintiffs ("Illumina") submit this statement to assist the Court in resolving Illumina's objections to BGI's deposition designations. Many of Illumina's objections go to recurring issues that arise throughout BGI's deposition designations, and Illumina has addressed representative examples grouped by category below to assist the Court in ruling on the objections.

I. BGI'S DESIGNATIONS VIOLATE THIS COURT'S ORDER GRANTING MIL NO. 2

This Court granted Illumina's Motion in Limine No. 2 ("MIL No. 2") to "exclude arguments that inventors had an intent to deceive or otherwise engaged in wrongful conduct before the PTO or argue that the patents are obvious by reference to the inventor's path to the invention." Dkt. 490 at 13.

Shortly after this Court's Order of October 29, 2021 (Dkt. 482¹), Illumina proposed a process to BGI to revise the parties' deposition designations based on this Court's pretrial rulings. Dkt. 495-1. Even after this process, however, BGI's designations blatantly violate this Court's Order on MIL No. 2 by including large swaths of inventor testimony designed to insinuate that the inventors (a) knew about and relied upon the Zavgorodny and Kovacs references and (b) are now perjuring themselves to "cover up" that reliance to conceal their path to the invention. BGI also includes many more designations that trace the inventors' path to the invention in other ways to improperly suggest obviousness. Illumina's objections to BGI's improper designations should be sustained and BGI should be further ordered to narrow its designations to comply with this Court's Order on MIL No. 2.

A. BGI's Designations That Suggest Knowledge and Reliance on Kovacs and Zavgorodny

BGI defies this Court's Order on MIL No. 2 by designating testimony to suggest that the inventors knew about Zavgorodny and Kovacs and are lying to "cover up" their supposed reliance on it. Here are just a few examples:

Q. Do you know if anyone at Illumina or Solexa ever copied any part or method from either Zavgorodny 1991 or 2000, the two articles we've been looking at?

Pickering Tr. at 160:22-25

¹ Cites to "Dkt. ." reference the docket for Case No. 19-cv-03770-WHO

1 Q. So it's fair to say that none of the chemists that were working for you ever told you, for
 2 example, that the route that they used to synthesize the 3'-O azidomethyl they had copied
 3 from Zab Gorodny [sic] or anyone else, right? ...

4 Milton Tr. at 45:5-9

5 At least you know that Zavgorodny suggested it and gave you a synthesis pathway for a 3'-
 6 O-azidomethyl blocked nucleoside before 2002; right? ...

7 Brennan Tr. at 126:21-127:2

8 Q. So did you do -- your group at Solexa do the chemistry that Zavgorodny described to
 9 introduce the azidomethyl functional group onto the three prime-OH of a nucleotide? ...

10 X. Liu Tr. at 193:19-195:15

11 This is precisely what the Court ordered BGI not to do in its Order on MIL No. 2.

12 BGI has also designated vast amounts of inventor testimony that violate this Court's Order on
 13 MIL No. 2 in other ways. For example, BGI plants seeds by designating testimony to try to establish
 14 the inventors' prior knowledge of Zavgorodny and Kovacs. *See, e.g.,* Pickering Tr. at 160: 14-16 ("Q.
 15 Do you know when Solexa first became aware of the Zavgorodny 2000 article that we're looking at?")
 16 Liu Tr. 325:14-15 ("Q. Have you ever heard anyone at Solexa reference this paper?"). . BGI further
 17 questioned the inventors about their familiarity with the journals in which the Zavgorodny references
 18 were published to suggest that the inventors must have seen and relied on them. *See, e.g.,* Wu Tr. at
 19 165:7-19, X. Liu Tr. at 320:4-20. Then BGI designated large swaths of testimony aimed at showing
 20 similarities between Zavgorodny/Kovacs and the inventors' path to the invention to suggest that they
 21 were perjuring themselves about whether they had seen and relied on Zavgorodny and Kovacs. *See,*
 22 *e.g.,* Pickering Tr. 158:3-17; Milton Tr. at 71:18-25 ("Q. So that -- that's what we were just looking at
 23 in your patent too, right? You used or what's described in your patent is the use of sulfonyl chloride --
 24 ... Q. -- to displace that group that the bromine was displacing originally in this Zab Gorodny paper,
 25 right?"); 61:4-7 ("Q. So "methylthiomethyl" [in the 973 patent] that's what we were just talking about
 26 with the Zab Gorodny group, right?"); 67:14-18 ("Q. And that's [in the 973 patent] the same way that
 27 that Zab Gorodny paper, the last one we were just looking at, Exhibit 72, that's the same intermediate
 28 he created using the same reagents, DMSO, acetic acid and acetic anhydride, right?"); X. Wu Tr. 271:1-
 5, 297:14-19, 297:23-298:16, 299:6-11 (source of synthesis protocol). BGI also designates questions
 about handwriting on a copy of Zavgorodny to wrongly insinuate that there was an inventor "cover up,"

1 even though the handwriting was proven to be from a non-inventor (Jeremy Doncaster) who did not
2 join the company until after 2008. Milton Tr. at 44:1-14; Pickering Tr. at 173:18-22; 177:2-13.

3 BGI has similarly designated a collection of irrelevant testimony from Lea Pickering to suggest
4 that that the inventors relied on Zavgorodny to make the invention in 2002-03 simply because Jeremy
5 Doncaster mentioned a Zavgorodny reference in an email in 2011-2012 in the course of doing
6 optimization work on a commercial process. Pickering Tr. at 200:13-15. (“Q. And that's a reference to
7 the fact that Illumina changed its synthesis route from the route used by Zavgorodny; is that right?”).
8 All of the questioning related to Jeremy Doncaster’s work in 2011-2012 is a sideshow that is covered
9 by MIL No. 2 and should be excluded under Rule 403.

10 It is telling that BGI’s designations still include large amounts inventor testimony that was cited
11 in Illumina’s briefing on MIL No. 2. *See, e.g.*, X. Liu Tr. at 132:18-133:8, 153:18-154:8, 193:19-
12 195:15; Milton Tr. at 27:24-29:2, 30:10-21; Brennan Tr. at 199:19-201:21, 202:1-8; X. Wu Tr. at 271:1-
13 5, 271:24-272:9. Illumina’s objections to this testimony should be sustained for the same reasons
14 explained above based on this Court’s ruling on MIL No. 2 and Rule 403.

15 BGI’s attempted detour into this irrelevant sideshow is highly prejudicial and should end. Its
16 argument that Illumina’s objections should be overruled base on “credibility” issues shows that it aims
17 to suggest that the inventors are perjuring themselves to conceal their path to the invention, which is
18 highly prejudicial and irrelevant to obviousness. Illumina’s objections to all of this testimony should
19 be sustained based on this Court’s ruling on MIL No. 2 and Rule 403.

20 **B. BGI’s Designations That Retrace The Path Of The Inventors**

21 BGI similarly defies this Court’s Order on MIL No. 2 by maintaining its designations about the
22 inventors’ path to the invention to suggest obviousness. One important example is BGI’s argument that
23 Dr. Milton “admitted the invention was obvious” based on his retracing of the inventors’ path, which
24 included several non-obvious insights before the inventors conceived of using azidomethyl:

25 Q. And how did you come up with it?

26 A. Okay. So **we started off** doing some water soluble palladium chemistry. This is the where
27 the water soluble phosphines came in. Water soluble phosphines facilitated water soluble
28 phosphine chemistry. And **the starting point for us** was actually to make a 3' allyl group.
A 3' allyl group works as a reverse terminator cause water soluble palladium chemistry can
remove it. But the more we play with the water soluble palladium complexes, **we realize**
that some -- you know, water soluble phosphines were becoming available in the early

2000s, which is a new area of chemistry. So we figured out if you've got water soluble phosphines, can you do a water soluble Staudinger reaction, which is the reaction we were talking about a few minutes ago. The Staudinger reaction is almost always done in an organic solvent aqueous. So we figured, well, how can we make a Staudinger target at the 3' position and the obvious thing is to make an azidomethyl group. You do the Staudinger reaction. You get a fragment and then spontaneously decomposes to the 3' hydroxyl and you get your nucleoside back.

Milton Tr. at 28:2-29:2 (emphasis added)

This is a textbook example of why the Federal Circuit has repeatedly held that the inventors' path to the invention involves impermissible hindsight and cannot be used to show obviousness. Dr. Milton was summarizing his recollection of the inventors' path with hindsight almost twenty years after the invention occurred. He testified about the thought process of the inventors, not about what just any *ordinarily* skilled person would have done without hindsight. When considered in context, his use of the term "obvious" was in a lay sense and is contrary to the legal standards for obviousness that the Court and jury must apply. The testimony would mislead and confuse the jury. Testimony "directed to the conclusion of obviousness and its underlying technical questions, is the province of qualified experts, not lay witnesses." *HVLPO2, LLC v. Oxygen Frog, LLC*, 949 F.3d 685, 688-89 (Fed. Cir. 2020) (holding that testimony directed to the conclusion of obviousness from a fact witness was inadmissible). This testimony was also identified in MIL No. 2, and Illumina's objections to it should be sustained based on this Court's ruling on MIL No. 2, as well as Rule 403.

Similarly, Illumina's objections to BGI's follow up questioning on this issue (i.e., "Q. What did you mean when you said it was an 'obvious' choice to use azidomethyl?") should be sustained for the same reasons, and further because BGI's counsel mischaracterized the prior testimony in an argumentative way and lead the witness, who was not shown to be hostile to BGI. Milton Tr. at 30:10-11. In fact, Dr. Milton has been the CSO at an Illumina rival since 2008 and is not aligned with Illumina and declined to be represented by Illumina's counsel. Milton Tr. at 9:23-25; 107:24-108:10. Illumina's other objections to Dr. Milton's testimony based on leading should be sustained for the same reason.

Further, BGI argues obviousness based on testimony from Dr. Milton about which chapters of a prior art reference book (Greene and Wuts) that he would have personally considered if he were looking for a protecting group for SBS. Milton Tr. at 80:10-81:17. This testimony is irrelevant because the questions asked what steps the inventor would take now, which necessarily involves hindsight

almost twenty years after the invention was made. Even if the questions had been framed prior to the invention, they would be irrelevant to obviousness because they would simply retrace the path of the inventors (or their speculation about what they personally might have done almost twenty years ago). BGI also designated testimony from other inventors about how they went about selecting protecting groups to consider on their path to the invention. *See, e.g.,* Balasubramanian Tr. at 203:13-204:5; 265:23-266:9; 267:5-21; see also Liu Tr. at 139:21-142:8, 156:21-158:8; Brennan Tr. at 82:20-83:15 (“Q ... And eventually the way that Solexa determined ...”); 163:25-164:7; Milton Tr. at 48:9-49:9. These examples illustrate some of the ways in which BGI is using its designations to improperly retrace the inventors’ path to the invention to suggest obviousness, and Illumina’s objections should be sustained based on this Court’s ruling on MIL No. 2, well as Rule 403.

II. BGI’S DESIGNATIONS THAT CALL FOR EXPERT TESTIMONY FROM LAY WITNESSES

BGI has made numerous designations of testimony in which BGI attempted to elicit off-the-cuff expert opinion testimony about references such as Zavgorodny and Kovacs from fact witnesses that were not testifying as experts in this case and who were not familiar with these references prior to this case. These fact witnesses include all nine inventors and Lea Pickering. BGI has no foundation for this testimony under Rule 702. This testimony should be excluded under Rule 701. *See, e.g., Munchkin, Inc. v. Luv N’ Care, Ltd.*, No. 2:13-CV-07228-ODW, 2015 WL 774046, at *3 (C.D. Cal. Feb. 24, 2015); *HVLPO2*, 949 F.3d at 688-89 (Fed. Cir. 2020).

For example, BGI’s counsel pressed an inventor to provide an impromptu patent claim validity analysis even after the inventor testified that he was unfamiliar with the Zavgorodny reference and had not seen the asserted patents a “very long time.” Brennan Tr. at 245:9-10 (“I, again, until this case was unaware of the paper.”); 90:12-14 (“A. I -- I haven't read that patent or those patents for a very long time. I don't recall what’s in the patents.”). BGI’s counsel repeatedly attempted to play “gotcha” and take advantage of the witness’s lack of familiarity with these documents and patent law:

It’s your opportunity to tell the jury as a scientist, an organic chemist who's been working in this field, who’s named as an inventor, it’s your opportunity to tell them scientifically how that, which you've claimed in claim 1 of the '444 patent, is scientifically different from what Zavgorodny disclosed on paper.

Brennan Tr. at 247:12-16; *see also id.* at 246:20-24 (“The jury is going to be watching you. Tell

1 the jury how what you've claimed in claim 1 of the '444 patent, when the Z group is azidomethyl, is any
 2 different from what Zavgorodny 1991 that we've looked at extensively discloses.”); 247:12-16 (“Go
 3 ahead and tell the jury how this claim, which calls for a nucleotide modified such that it has a removable
 4 3'-O-azidomethyl block on it is any different from what Zavgorodny disclosed, which we looked at
 5 extensively today.”); 245: 24-25 (“how is that any different than what you've claimed in claim 1 ...?”);
 6 245: 6-7 (“So how is that any different than what you claimed?”).

7 In the course of this, BGI’s counsel also attempted to trap this fact witness into agreeing that
 8 Zavgorodny discloses a “nucleotide,” even though there is no dispute in this case that Zavgorodny
 9 discloses a nucleoside, and not a nucleotide. *See, e.g.,* Brennan Tr. at 244:13-16 (“Q. BY MR.
 10 BILSKER: Right. And if that’s all that’s required is a modified **nucleotide** having a removable 3'-OH
 11 blocking group, where the blocking group Z is azidomethyl, **Zavgorodny taught that, didn’t he?**”)
 12 (emphasis added).

13 While BGI’s questioning did not go this far in all instances for all inventors, BGI devoted a
 14 sizable amount of its designations to attempting to elicit improper expert opinions about the Zavgorodny
 15 references from lay witnesses that were unfamiliar with them and are not testifying as experts in this
 16 case. *See, e.g.,* Pickering Tr. at 144:21-25; Liu Tr. at 132:18-133:8, 156:8-158:8. None of this should
 17 be allowed. This testimony was not based on the witnesses’ personal knowledge about Zavgorodny or
 18 Kovacs prior to this lawsuit, and Illumina’s objections should be sustained under FRE 701, FRE 702,
 19 and FRE 403.

20 **III. BGI’S DESIGNATIONS OF ARGUMENTATIVE QUESTIONING**

21 Illumina’s objections to BGI’s argumentative questions should be sustained. In many places,
 22 BGI has designated argumentative statements made by BGI’s counsel before their questions were
 23 posed. *See, e.g.,* Liu Tr. at 250:24-251:24, 256:10-21; Brennan Tr. 126:17-24.

24 BGI also questioned an inventor, Joseph Brennan, about a product brochure from Jena
 25 Biosciences (“Jena”) that Dr. Brennan had never seen before the deposition. Jena is aligned with BGI
 26 because it supplied BGI with azidomethyl nucleotides. Dkt. No. 118-6 at 14 (“obtained from Jena
 27 Biosciences, Germany”). The Jena brochure was created in March 2020 (well after this litigation began
 28 and shortly before the preliminary injunction issued) and contains a self-serving citation to Zavgorodny,

which is unreliable hearsay. Ex. 1 (Brennan Depo. Exhibit 127). Even though the witness had no personal knowledge about the Jena brochure, BGI has designated argumentative questioning about it that is designed to mislead the jury. Brennan Tr. at 217:6-7 (“Q. Is that surprising to you that they attribute that molecule to Zavgorodny?”). Illumina’s objections to this and BGI’s other argumentative questions should be sustained.

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Respectfully submitted,

/s/ Edward R. Reines

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